IAC/IAC-D-17
26 August 1958

I N T E L L I G E N C E A D V I S O R Y C O M M I T T E E

COMMITTEE ON DOCUMENTATION

MEMORANDUM FOR: IAC Committee on Documentation

SUBJECT : New Bibliographic Machine Planned

The attached is circulated for the information of the members.

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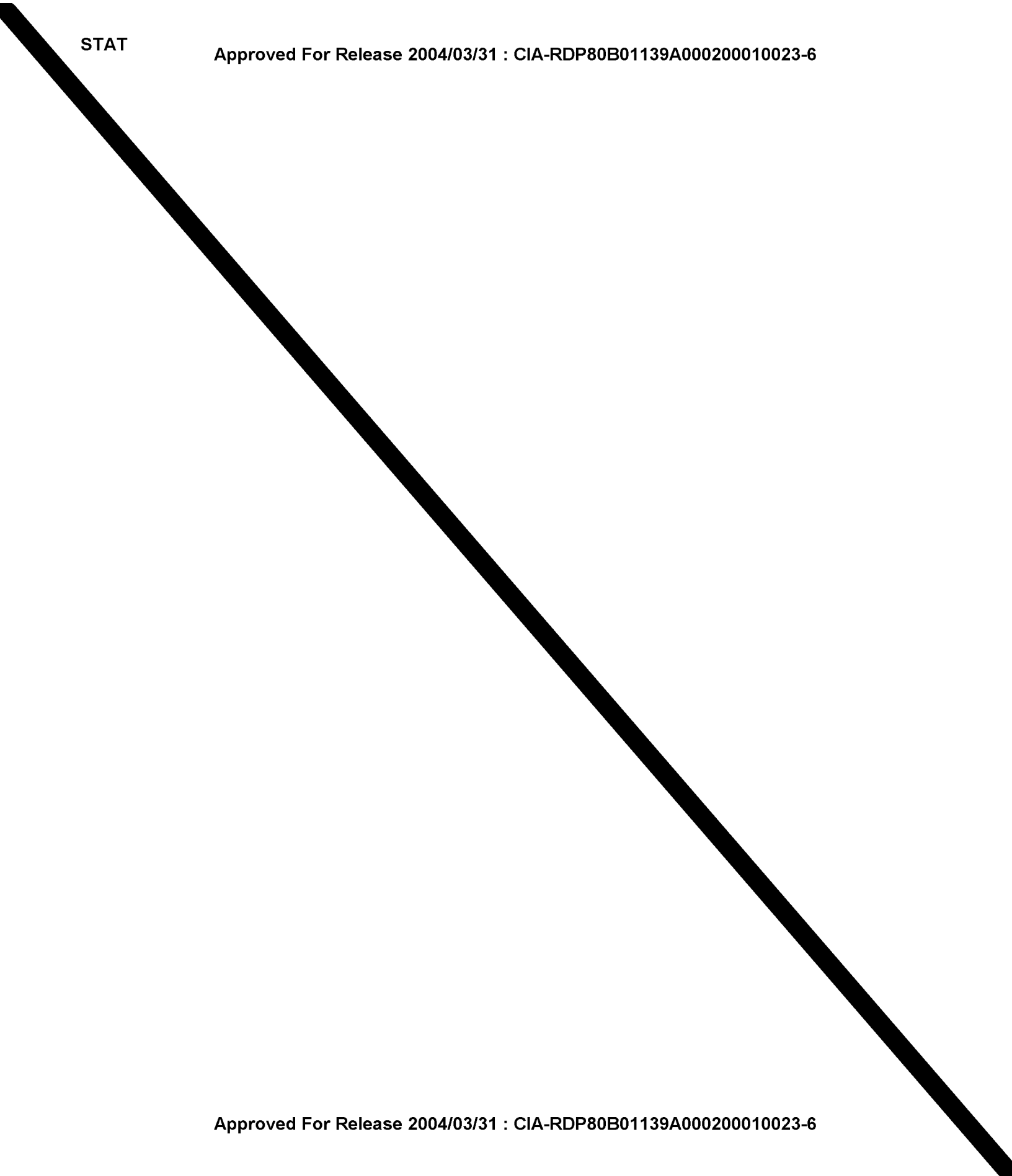
Paul A. Borel
Chairman

Attachment



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NEW BIBLIOGRAPHIC MACHINE PLANNED

[This report presents information from an article by K. Drugov, entitled "Machine-Bibliographer," in the May 1958 issue (p 68) of Nauka i Zhizn' (Moscow).]

Hundreds of books and thousands of articles on various branches of knowledge are printed each year and deposited in libraries. Each publication is supplied with a special card (passport) which lists the name of the author, the subject matter, the basic problems discussed by the author, his deductions, and many other items.

A card of this type supplies almost complete information about each "printed unit" prior to a [reader's] direct contact with that particular unit. However, even this system requires a great deal of time for the selection of literature on a particular problem.

At present, the Laboratory of Electric Modeling of the Academy of Sciences USSR is planning a special information machine. It consists of a large high-speed "memory" (library), a "reading" device (for scanning and processing the information), and input devices (which perform machine translation from a foreign language as well as translation into the machine language, i.e., coding).

The durable high-speed machine "memory" constitutes the fundamental and unique merit of the new information machine. The contents of information materials are inscribed on metal-pla ed printing sheets in the form of indentations. These sheets are then put together to form blocks. This machine can operate for a long period of time at a previously unattainable speed in reproducing information because it has no moving parts, such as those of previously made machines.

When an inquiry is received, the machine "translates" it into a code and develops a search pattern for the desired information. The "reading" device selects the necessary material according to this pattern and processes it.

After the search for material and its processing are completed, the machine delivers the information to the output printing mechanisms.

The duration of the recording and the comparison-verification processes is 6 to 10 millionths of a second. Contactless relay elements provide for 300,000 closings per second. The constant machine "memory" consists of over one billion cells, and the speed of "reading" is about one million "pages" of information per hour.

Appended illustrations follow:

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Figure 1. Perforating Device for Recording Information on Sheets

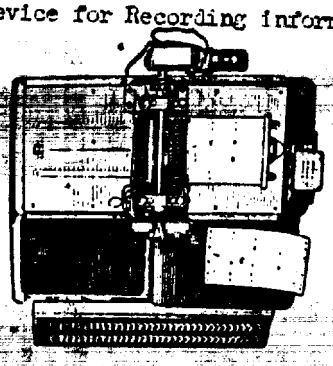

Figure 2. General view of a block (book) which consists of 512 sheets (pages) for 512 binary symbols.

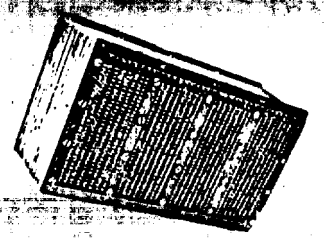

Figure 3. Illustration of a single cassette (a cathod-ray tube and a matchbox are illustrated for comparison of size).